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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,915	03/24/2004	Les Bogdanowicz	114429-007	8057
7590 12/07/2005			EXAMINER	
Bell, Boyd & Lloyd LLC P.O. Box 1135 Chicago, IL 60690-1135			MALAMUD, DEBORAH LESLIE	
			ART UNIT	PAPER NUMBER
			3766	
DATE MAILED: 12/07/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/808,915	BOGDANOWICZ, LES	
	<b>Examiner</b>	<b>Art Unit</b>	
	Deborah Malamud	3766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/28/05</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because of the reasons cited by the draftsman in the attached PTO-948 form. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested: Device for ocular stimulation.

### ***Claim Objections***

3. Claim 7 is objected to because the word "substrates" should be changed to "substrate." Appropriate correction is required.

4. Claim 21 is objected to because the word "are" should be changed to "is" in the first line of the claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The meaning of the phrase "arranged in a shunt manner" is unclear. The examiner considers this phrase to mean that the photodiodes are arranged in any manner that allows electric current to flow from one area on the substrate to the other.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification mentions nowhere the use of a phototransistor as a substrate for the device as claimed.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-2, 5-8, 10 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Abreu (U.S. 6,123,668). Regarding claims 1, 7, 8 and 10, Abreu discloses a neuro stimulation transmission device that is (column 94, lines 65-67) "externally placed on the eye using an oversized contact device (984) as a corneal scleral lens. The device includes an electrode (986) producing a microcurrent, a microphotodiode or electrode (988), a power source and a transmitter for transmission of a signal to a remote location for analysis and storage." See Figure 59C. The examiner considers this to be a contact lens with a member embedded in a surface thereof for electrically stimulating an eye of a wearer of the lens.

Regarding claim 2, Abreu discloses (column 20, lines 29-34) "radio activated micro-photodiodes or/and micro-electric circuits and electrodes are surgically implanted or externally placed on the eye or other parts of the body such as the brain and used to electrically stimulate non-functioning neural or degenerated neural tissue." The examiner considers these micro-photodiodes to be a substrate that generates an electrical current to an eye in response to an inductance effect.

Regarding claims 5 and 6, the examiner considers the microphotodiode (988) in Figure 59C to be arranged in a shunt manner or in a combination of a parallel manner and a shunt manner.

Regarding claim 21, the examiner considers the electrode (986) in Figure 59C to be generally centrally disposed on the lens.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3, 9, 11-13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abreu (U.S. 6,123,668) in view of Chow et al (U.S. 2003/0014089). Abreu differs from the claimed invention in failing to teach that the substrate is activated by exposure to electromagnetic radiation in the near infrared spectrum. Chow '089 however discloses (paragraph 61) at least two photodiodes to "provide biphasic and variable levels of stimulating electric currents both controlled by the use of different wavelengths of external visible and/or infrared light." The Chow '089 reference also teaches the use of near infrared light for this purpose. Although Abreu teaches a contact lens device and Chow '089 teaches a retinal stimulation device, both references teach electrical stimulation of the eye in response to an external stimulus. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Abreu's contact lens device with Chow's '089 light activation in order to exactly activate each of the photodiodes to stimulate a desired portion of the eye.

Regarding claim 9, Chow '089 discloses (paragraph 13) "the device may also comprise an inductive receiver and/or a solar cell, and/or a battery."

Regarding claims 11-13 and 20, Chow '089 discloses (paragraph 13) "the stimulating electrode of an RSD may be, for example, an anode or a cathode; the ground return electrode comprising an opposite polarity of the stimulating electrode."

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abreu (U.S. 6,123,668) in view of Chow et al (U.S. 2003/0014089) in further view of Chow et al (U.S. 2002/0087202). Abreu in view of Chow '089 differs from the claimed invention in failing to teach exposure of the substrate to light of a wavelength from about 880 nm to about 940 nm. Chow '202 however discloses (paragraph 12) "multiple layer dielectric filters are disposed on the P surfaces and N surfaces of the MMRI subunits to allow visible light (400 to 740 nm) to pass through to the P surfaces and infrared light (740-900 nm) to pass through to the N surfaces. In this manner, the PiN configuration of each MMRI subunit responds to visible light while the NiP configuration responds to infrared light." Though Abreu teaches a contact lens device, and Chow '089 and Chow '202 both teach a retinal stimulation device, both references teach electrical stimulation of the eye in response to an external stimulus. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Abreu's contact lens device with Chow's use of electromagnetic radiation and with Chow's '202 activation wavelength in order to create a very specific stimulus for the electrical current response of the substrate.

14. Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abreu (U.S. 6,123,668) in view of Chow et al (U.S. 2002/0087202). Abreu differs from the claimed invention in failing to teach stimulating eye glasses as the light source.

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Chow '202 however discloses (paragraph 79) "FIG. 24, A through D shows a glasses-like configuration (94) of the PTOS [projection and tracking optical system] component of the AIRES [adaptive imaging retinal stimulation] system." Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Abreu's contact lens device with Chow's '202 glasses in order to externally concentrate the light source to the desired location of stimulation.

Regarding claim 15, Chow '202 discloses (paragraph 17) "the AIRES PTOS headset is worn by the patient, and projects variable intensity IR and visible-light images and illumination into the eye, by using an IR and visible-light capable CRT (IRVCRT)." The examiner considers this to be stimulating eye glasses that have lenses that filter infrared light.

Regarding claims 16 and 17, Chow '202 discloses (paragraph 79) an "internal infrared and visible light capable LED light source (92)." See Figure 24C. The examiner considers this to be a light emitting diode that is associated with the stimulating eye glasses.

Regarding claims 18 and 19, Abreu in view of Chow '202 discloses the claimed invention except for more than one light emitting diode emitting electromagnetic radiation at more than one wavelength. It would have been obvious to one of ordinary skill in the art at the time of the invention to use more than one light emitting diode with more than one wavelength of light, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. See MPEP § 2144.04.



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15. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abreu (U.S. 6,123,668). Abreu discloses the claimed invention but does not disclose expressly the shape of the electrodes as arcuate. It would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the electrode as taught by Abreu, with the shape claimed, because the applicant has not disclosed the shape provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with the electrodes as taught by Abreu, because both Abreu and the claimed invention are used to stimulate the surface of the eye of a patient. Therefore, it would have been an obvious matter of design choice to modify Abreu's electrode to obtain the invention as specified in the claim.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. 2003/0158588 to Rizzo et al, disclosing Minimally invasive retinal prosthesis

U.S. 6,427,087 to Chow et al, disclosing Artificial retina device with stimulating and ground return electrodes disposed on opposite sides of the neuroretina and method of attachment

U.S. 5,109,844 to de Juan, Jr et al, disclosing Retinal microstimulation

U.S. 6,792,314 to Byers et al, disclosing Miniature implantable array and stimulation system suitable for eyelid stimulation

U.S. 2004/0078064 to Suzuki, disclosing Electrode member for retinal stimulation, and artificial retinal device using the electrode member

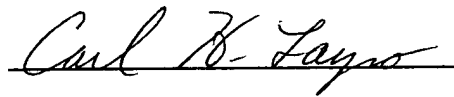
U.S. 2004/0117011 to Aharoni et al, disclosing Intraocular implants

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Malamud whose telephone number is (571) 272-2106. The examiner can normally be reached on Monday-Friday, 8.00am-5.30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pezzuto can be reached on (571)272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Deborah Malamud  
Art Unit 3766



CARL LAYNO  
PRIMARY EXAMINER